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JOINT APPLIED PROJECT

**Naval Surface Warfare Center Dahlgren Division:
Application of Lean Six Sigma in the Pre-Award Procurement Process**

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September 2008

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The objective of this project is to: (1) provide an overview of Lean Six Sigma principles in contracting and acquisition; (2) identify Navy contracting processes that have and can be analyzed using Lean Six Sigma principles; (3) explore how Lean Six Sigma can be applied to interpret and implement regulations and instructions affecting the pre-award procurement process. The expected outcome of this project is an analysis of the applicability of using Lean Six Sigma processes to streamline the pre-award procurement process using Lean Six Sigma principles.

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**NAVAL SURFACE WARFARE CENTER DAHLGREN DIVISION:
APPLICATION OF LEAN SIX SIGMA IN THE PRE-AWARD PROCUREMENT
PROCESS**

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Submitted in partial fulfillment of the
requirements for the degree of

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from the

**NAVAL POSTGRADUATE SCHOOL
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TABLE OF CONTENTS

LIST OF FIGURES

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LIST OF TABLES

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LIST OF ACRONYMS AND ABBREVIATIONS

ARTC — AEGIS Training and Readiness Center
BSC — Balanced Score Card
CDSA — Combat Direction Systems Activity
COR — Contracting Officer's Representative
CPI — Continuous Process Improvement
DAU — Defense Acquisition University
DFAR — Defense Federal Acquisition Regulations
DFAS — Defense Finance and Accounting Service
DoD — Department of Defense
EDA — Electronic Document Access
FAR — Federal Acquisition Regulations
FedBizOpps — Federal Business Opportunities
FPDS-NG — Federal Procurement Data System – Next Generation
GWOT — Global War on Terrorism
JFCOM — Joint Forces Command
LSS — Lean Six Sigma
NAVSEA — Naval Sea Systems Command
NSWCDD — Naval Surface Warfare Center Dahlgren Division
NSWCIHD — Naval Surface Warfare Center Indian Head Division
PADS — Product Area Directorates
PALT — Procurement Action Lead Time
PEO — Program Executive Office
RIE — Rapid Improvement Event
RIP — Rapid Improvement Plan
SPS — Standard Procurement System
TQM — Total Quality Management
VSA — Value Stream Analysis
WAWF — Wide Area Workflow

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I. INTRODUCTION

A. BACKGROUND

Lean is about speed, reducing lead time by eliminating waste. Waste is anything – time, costs, or work that adds no value in the eyes of the customer. (The Lean Enterprise Memory Jogger). Six Sigma is about quality and reducing defects by eliminating mistakes and reducing variation. (The Black Belt Memory Jogger). Lean Six Sigma (LSS) places emphasis on both of these areas. The economic customer only wants to pay for work that adds value (changes the form, fit or function) to the end product or service. Anything else, in the customer's eyes, is waste or non-value added. LSS helps identify customers, describe holistic processes, identify waste, and eliminate waste where possible (Lean Six-Sigma College Green Belt text).

Department of Defense (DoD) Contracting Offices and more specifically, Naval Surface Warfare Center Dahlgren Division (NSWCDD), is experiencing an increasing workload, an aging and soon retiring workforce, and an inability to hire a sufficient number of qualified Contract Specialists. LSS may be a valuable and efficient tool that can be utilized to address this current situation.

In April 2007, the Deputy Secretary of Defense instructed the Office of the Deputy Undersecretary of Defense for Business Transformation to create the Continuous Process Improvement (CPI)/LSS Program Office to expand the use of LSS throughout the department. A new directive issued in May 2008, which replaces the April 2007 directive, is an indication of the growing importance of LSS in DoD's business practices. The Deputy Secretary of Defense discusses the importance of LSS in the May 2008 DoD Directive. The following excerpt provides the purpose of this directive:

> Establishes policy and assigns responsibilities to institutionalize CPI/LSS as one of the primary approaches to assessing and improving the efficiency and effectiveness of DoD processes in support of the Department's national defense mission.
>
> (Deputy Secretary of Defense, 2008, DoD-Wide CPI/LSS Program)

The directive further instructs DoD components to:

1) Ensure implementation of CPI/LSS policies;

2) Implement CPI/LSS program s to improve overall effectiveness and efficiency across m issions and functi ons to gain the broadest possible range of organizational improvements;

3) Develop and implement appropriate education and training procedures and prom ote CPI/LSS career develo pment opportunities, to include a CPI/LSS award and perform ance obj ective in itiative as a ppropriate; and

4) Establish CPI/LSS education, traini ng, and certification procedures consistent with DoD-wide guide lines and standards and includ e CPI/LSS in individual em ployee perform ance obj ectives as appropriate.

(Deputy Secretary of Defense, 2008, DoD-Wide CPI/LSS Program)

The im portance of LSS as a process im provement tool has been established through the issuance of this directive. We are investigating the use of LSS for procurement in this thesis. A large and criti cal part of the p rocurement arena is the p re-award procurement process. Based on the autho rs' experience, the pre-award proces s is an area lik ely to be ide ntified by the custom er as cum bersome and not custom er need focused. It is also an area in which minimal investment up front could produce maximum results in the end state.

For the pu rposes of this project, the f ocus will be o n large co mpetitive noncommercial services contra cts (any procurem ent greater than $100,000). The Naval Sea Syste ms Command (NAVSEA) has direc ted that a ll co mpetitive s ervices requirements be issued through Seaport-e portal. Therefore, this project will focus on the pre-award procurement process utilizing th e Seaport-e portal. (The NAVSEA Seaport-e portal provides a standardized means of issuing competitive solicitations amongst a large group of approved contractors, as well as th e ability to award and manage perform ance-based task orders.)

B. OBJECTIVES OF RESEARCH

The purpose of this project is to investigate whethe r LS S principles can be effectively applied to Navy acquisition and c ontracting. The author s' believe that the

volume of work at NSWC DD Contracts Division has consistently exceeded the capacity of the acquisition workforce, which has resulted in an increased Procurement Action Lead Time (PALT), dissatisfied customers, and low moral. This project will establish LSS as an advantageous means to benefit the pre-award procurement process and NSWCDD customers.

The objectives of this project are to:

- Provide an overview LSS principles and methodologies
- Introduce the application of LSS to the pre-award procurement process
- Describe the organizational structure of the NSWCDD Contracts Division
- Identify the current pre-award procurement process
- Establish the members of the Value Stream Analysis (VSA) team and their roles and responsibilities to address the waste or Non-Value added steps involved with the current pre-award procurement process
- Make recommendations that can result in reduced PALT, increased customer satisfactions and employee morale
- Offer recommendations for future acquisition and contracting related LSS projects

C. RESEARCH QUESTIONS

Through the researchers' knowledge, experience, and research conducted in regards to the pre-award procurement process and LSS methodologies, the following questions were developed as a basis for this research:

1. Primary Research Question

How can LSS be applied to the pre-award procurement process to streamline and improve acquisition processes, including effects on customer satisfaction, cost, and lead-time?

2. First Subsidiary Question

What are the various approaches fo r launching LSS program s in various acquisition, contracting, and procurem ent processes, e.g., m andated employee education and training, on the job training, consultant driven, cross-functional teams?

3. Second Subsidiary Question

What are the known and poten tial advantages and disa dvantages of applying LSS methodologies to the pre-award procurement process?

4. Third Subsidiary Question

What is the current business model for the pre-award contracting process?

5. Fourth Subsidiary Question

How might LSS principles be applied to improve the current business practices in the pre-award procurem ent process? If LSS pr inciples can b e applied effectively in th e pre-award p rocurement process, what is a reasonable plan of action for im plementing these changes?

D. BENEFITS OF STUDY

This project analyzes th e applicability of using LSS to im prove contracting and procurement processes. Specifically, non-va lue added and non-essential activities m ay be identified as candidates for LS S inte rvention, including im pacts on product and service quality, custom er and em ployee sati sfaction, and implem entation issues. T his project will serve as ov erall guidance on how to ef fectively implement LSS within the pre-award p rocess, including the id entification of key m embers of the VSA tea m and recognition of the numerous decision steps currently addressed in the pre-award process.

E.   SCOPE AND LIMITATIONS

1.   Scope

This projec t is conf ined to the pre- award procurem ent process utilizing the Seaport-e portal at NSWCDD Contracts Division.

2.   Limitations

The members of this project did not conduc t a LSS event associated with the pre-award procurement process at NSWCDD. Due to time constraints, the inf ormation and recommendations provided in this project ar e limited to personal experiences with LSS and the pre-award procurement process, as well as literature reviews conducted in both of these sub ject areas. No origin al data were collected o r an alyzed. Hence the rese arch reported here is theoretical in nature, and   additional research is needed to support our claims and recommendations.

F. METHODOLOGY

This project depended upon active particip ant research, and lit erature reviews to analyze the LSS principles and the pre-award procurement process.

One team m ember provided the L SS e xpertise with her b ackground as a LSS Green Belt. In the past, she has participated in several LSS events and has taught training classes on LSS to other contra cting personnel. The other   team m ember was able to participate in a LSS event conducted by one of NSWCDD's program offices. This LSS event provided the experi   ence needed to understand the m   indset behind LSS methodologies.

Secondary research included reviews of DoD, NAVSEA, and NSWCDD's guides and instru ctions, published books, scholarly   journals, trad e m agazines, and acad emic research papers focused on LSS and the pre- award procurement process. The res earch provided historical and intended future state perspectives, as well as an o verview of LSS principles.

G.   ORGANIZATION OF THE PROJECT

This project is divided into five chap ters. Chapter I provides a short background on the im portance of LSS, identif ies rese arch questions, describes potential benefits of the study, and addresses project scope an   d lim itations. Chapter II addresses the foundation of LSS by presenti ng DoD and NAVSEA gui dance, detailing the processes associated with LSS, explains how these p rocesses can be im plemented, and introduces the roles and responsibilities of the m embers involved in the LSS process. Chapter III outlines the organiza tion and activities of NSW CDD Contrac ts Di vision includ ing the customer base, describes the im portance of a VSA team and the significant role of the VSA Champion, as well as provides an introdu ction into the current business m odel for the pre-award procurement process. Chapter   IV analyzes the future s tate of the pre-award pro curement process utilizing the Sea port-e por tal a t NSW CDD and spec ifically identifies the members of the VSA team including the tasks they will need to carry out, such as m apping out the curren   t pre-awar d procurem ent process while considering possible process variations. Chapter V pr ovides the conclusions and recomm endations related to the research questions, and suggested areas for further research.

II. LEAN   SIX SIGMA FOUNDATION

A. INTRODUCTION

In a memorandum dated 3 May 2006, the Secretary of the Navy, Donald C. Winter, stated the following:

> As the Secretary of the Navy, I am challenged to lead the Department in executing two great tasks simultaneously: fighting today's war and positioning our Force for an uncertain future. We face additional fiscal pressures that lead us to better stewardship of taxpayer dollars where greater efficiency leads to improved effectiveness. While in industry, I found that both buyers and suppliers who employed Lean Six Sigma experienced better efficiencies, increased morale and higher levels of performance.

(Secretary of the Navy, 2006, Memorandum)

The DoD is "transforming to a more agile, surgeable force to meet current readiness and support the ongoing Global War on Terrorism (GWOT)." (NAVSEA Implementation Plan). At the same time, DoD "faces a crisis in being able to apply sufficient budget and resources to re-capitalize the force with new equipment to meet future readiness." (NAVSEA Implementation Plan). On every front, DoD "must transform the way it does business to dramatically cut costs, improve throughput, shorten new product development cycles, enhance personnel development, and preserve fundamental values in order to win the GWOT both now and into the future." (NAVSEA Implementation Plan).

Admiral Paul E. Sullivan, the previous NAVSEA Commander, began to actively push LSS to the Warfare Centers (Admiral Sullivan email, 28 July 2006). Goals were established before the Warfare Centers were aware of LSS. The NSWC DD established a Tiger Team to determine the best and most proactive approach to this new mandate. LSS black belts and green belts were trained, goals were set, projects were run, the workforce was educated and a Lean Office was formed.

This chapter provides the basic foundation essential to understanding LSS. The concepts, tools, and myths associated with LSS will be addressed, as well as the roles and responsibilities of members involved in the LSS process. This introduction seeks to prepare the reader for the analysis contained in this project, which will be covered in subsequent chapters.

B.   BACKGROUND - LEAN SIX SIGMA

1.   Myths of Lean Six Sigma

To fully understand wh at LSS means, we mu st first understand a fe w of t he myths associated with LSS. While   LSS was originally used in   manufacturing settings, it can be beneficial i n any instance wer e ther e is a pr ocess (and there i s al most always a process). (Harvard Management Review). It is not repackaged   Total Quality Ma nagement (TQM), Balanced Score Card (BSC), or other mana gement initiatives. It do es not ignore customer requirements; custome r requir ements are equall y i mportant to ti me savi ngs. LSS is not simply difficult-to-understand statistics and is not an accounting game without real savings.

LSS requires each of the following activities:

- Focusing on what is critical to the customer,

- Emphasizing the bottom line,

- Validating any claims of success, and

- Institutionalizing the process through extensive training programs and certification of expertise (Shere, 2003).

2. Le   an

Lean started with the Toyota Pr oduction System in the early 1980s a nd provides a systematic approach to cost improvement through waste r eduction and eli mination of non-value added activiti es (LSS College, February 2003). Waste can be anything, suc h as ti me, costs, or work t hat adds no va lue in the eyes of t he customer. Lean means hal f the labor, half the floor space, i ncreased capaci ty, i mproved rapi d r esponse ca pability, one-te nth the in-process work, and shorter overa ll cycle times.   In summar y, Lean is focuse d on s peed, while reducing lead time and eliminating waste.

3. Six   Sigma

Six Sigma wa s developed by M otorola Inc. in the mid-1980s due to t heir Japa nese competitor's current concept of quality. Motorola could not a fford products of poor quality and theref ore, developed Six-Si gma to control variab ility in processes,   with an expected outcome of zero defects in their products (Shere, 2003).

According to the LSS Colleg e (6 December 2 004), Si x Sigma i s a bout qualit y, reducing defects by eli minating mistakes, re ducing variati on, a nd i mproving ove rall customer satisfacti on. Six Sigma i s an optimized per formance le vel s eeking mini mal defects in a ny pr ocess, whether it produces a pr oduct or a s ervice. The DM AIC model, which stands for Def ine, Measur e, Analyze, I mprove, and Control, is utilized within Six-Sigma.

Six Sigma DMAIC Model

DEFINE	MEASURE	ANALYZE

Define the Problem
• Define Scope /
  Boundaries
• Define the Case for Action
• Define the Sponsor
• Commit Resources
Define Customer Value
Define Expected Benefit
Define the Vision

Observe "As Is" Baseline
  • Describe the Situation
Measure Actual
  • Obtain Process X's
  • Obtain Process Y's
  • Determine Process Capability
Develop Process Map
Determine Cause and
  Effect Relationships

Understand
  • ID Potential Causes
  • ID Solutions for Improvement
  • Summarize & Prioritize Solutions
  • Plan the Improvements

IMPROVE	CONTROL

Reduce Waste
  • LIW
  • Reduce Complexity
  • Reduce Variability
Conduct Pilots
  • Run Pilots, Gather Data
  • Design Controls
  • Plan Implementation
  • Deploy Improvements

Implement Controls
Assess and Adjust
Train personnel
  • Update Priorities
Plan Next Steps
  • Identify Potential Follow-on Projects
Publicize & Recognize
Knowledge Sharing
  • Document & Share Knowledge
  • Solicit Sponsor & Team Feedback
  • Capture Lessons Learned

Figure 1. Six Sigma DMAIC Model.
(From NAVSEA Lean Implementation Plan, date)

- Define – Define where you are and where you are going to commit resources;

- Measure – Deter mine the base line of t he process, the target performance, de fine the inputs and outputs, and validate the measurement system;

- Analyze – Using data, establish key process inputs that affects process outputs;

-

9

- Improve – Develop the improvements; create the path to success, implement and embed the improvements; and

- Control – Document, monitor and assign responsibilit y for sustaining the gains, recognize successes and look to the future.

When de fining a nd me asuring a proces s, it becomes apparent t hat t here ar e constraints, t hat i s, any r esource whose capa city is less than th e de mand place d upon it (attributed to "The Goal" by E. Goldratt in LSS textbook, Less on 6, Page 6, 24 Nov 2004) . In Eli Goldratt's book titled *The Goal*, he de fined the Ste ps to Constrai nt Mana gement as the following:

- Identify: What is the constraint?

- Exploit: Utilize all resources to balance workloads; address four Partners

- Subordinate: Focus non-constraints towards supporting the constraint

- Elevate: Apply Lean

- Repeat Step 1: The constraint has probably moved.

Six Sigma i s a tool utili zed by management t hat has t he potential to successfull y improve quality, while producing substantial savings w ithin an organizati on. According to an article titled "How Six Sigma May H elp HR to Im prove Processes and Services" published i n *HR Focus* (84 (anonymous, 2007), Six-Sigma has bee n used by compani es such as Motorola Inc. (Six Sigma's creator and holder of the Six Sigma registered trademark and service mark), General El ectric, and 3M Comp any. The article furt her states that these companies have reported i mproved cust omer s atisfaction a nd c orporate savi ngs i n the billions.

4. Lean Six Sigma

Dr. Kenneth D. Shere defines LSS as an approach that combines lean manufacturing and Six Si gma fr om a global per spective a nd takes both suppliers and customer into account. This approach t ells us how t o improve our pr ocesses in a way t hat considers both the costs of poor quality and issues critical to customer requirements (Shere, 2003). Further,

LSS is a str uctured me thodology that foc uses on e fficiency and quali ty and c ould have substantial c ost and proc ess be nefits when applie d t o a n or ganization's r outine pr ocesses (Dobriansky, 2008).

Combining both speed and quality allows cu stomers to pay for work that adds value (changes the form, fit, or functi on) to the end product and that can be obt ained in a ti mely manner. The me thodologies of LSS focus on incr eased value t o t he custom er, w hich ultimately results in improved customer satisfaction.

Most processes ar e "un- Lean," they have a Process Cycle Effici ency (PCE) of <19%. PCE = Val ue-add Time/Total Lead Time. A primary LSS goal is reducing Work in Process (W IP). If you can't control W IP, you can't contro l Lead Time (L ittle's Law). Every process should operate on pull , not push, to minimize Lead Time. Onl y 20% of the activities cause 80% of the delay. (NSWCDD Lean Training, May 2005).

5. Lean- Six Sigma Roles and Responsibilities
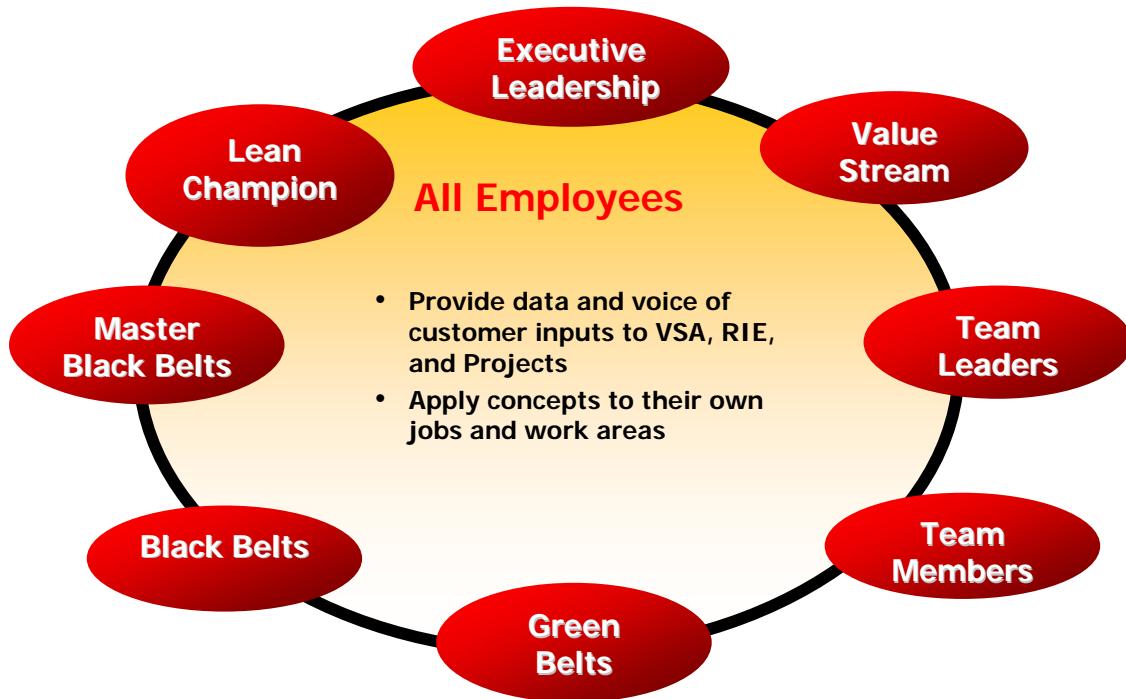
Figure 2. Lean Deployment Roles of NAVSEA
(From NAVSEA Lean Implementation Plan)

a. Executive Leadership

The Executive Leadership owns the vision, direction, and business results. They lead change in the organization and they have the ability to allocate resources. The Senior Leaders are responsible for the successful implementation of the Lean efforts and must take ownership of Lean implementation at their activity.

b. Lean Champion/Lean Office

The Lean Champion is a Senior Manager that reports directly to the Site Commanding Officer. They head the Lean Office and ensure that all Lean activities conducted are aligned with a NAVSEA line of business as indicated in Figure 3, NAVSEA LOB/PEO Business Model from the NAVSEA Lean Implementation Plan.
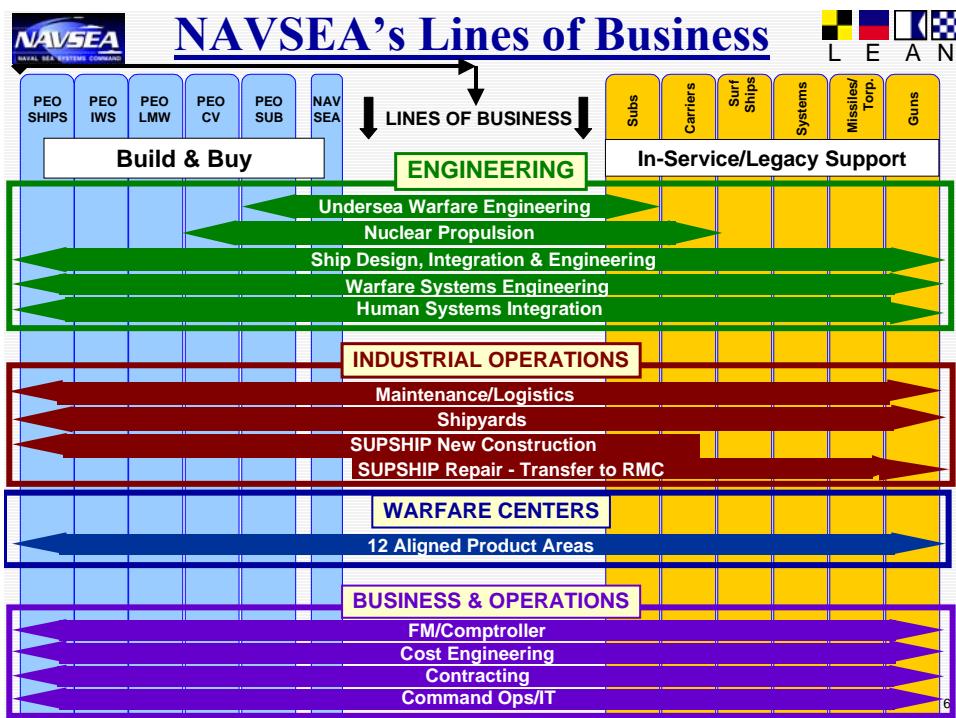
Figure   3. NAVSEA LOB/PEO Business Model
(From NAVSEA Lean Implementation Plan)

The Lean Office is responsible for communicating Lean implementation efforts, tracking and reporting Lean events and results, training personnel involved in Lean efforts, and coordinating the use of Lean experts.

c.   Value Stream Champion

Value Stream Cham pions are at   the f   ront-line of the NAVSE   A Implementation Pl an. They are   res ponsible fo r eff ective ex ecution of the R   apid Improvement E vents (R IE). Th e Va lue S tream Cha mpion is res ponsible for t he Rapid Improvement Pla n (RIP), Re deployment Pla n, and the f inancial resu lts. They must be personally involved and supp   ort Lean efforts in their   area, co mmitting the necessary resources, i ncluding t he re moval of a ny barriers, and i mplementing the improvement actions.

d.   Master Black Belts / Bla ck Belts / Green Belts / Team Members/ Team Leaders

These pers onnel are t   he ke y res ources doing the wor   k of pr   ocess improvement. Master Black   Belts and Black Belts are the   key facilitator s and process improvement is typically their full ti me job. It is the responsibility of the Master Black Belt to train the Black Belts   and Gre en Belt s. The Master Black Belt lea ds more co mplex projects, while Black Belts lead larger, yet not as c omplicated, projects. Green Belts rely on Black Belt s as thei r coach, le ad s mall-moderate project s, a nd support Rapi d I mprovement Teams. Team Leaders and Members are normally responsible for the work being improved, and partici pate in RI Es and Projects. Their   involvement is crucial   and the reason Lea n efforts s ucceed. They have the knowle   dge and motiva tion to i mplement i mprovements developed during RIEs and Projects, and they are responsible for the results.

6.   Lean Six Sigma – Process Defined

According to Dr. Shere (2003) , tasks are value-added when the customer is willing to pa y for t hem. Some t asks, s uch a s invoic ing are non- value added, but are essential for business operations. Anything else, in the eyes of the customer, is considered waste or non-value added.

13

a. Value Added

Essentially, a Value Added activity is something for which the customer is willing to pay. Any step in a process is considered Value-Added if it meets all of the following:

1) If the customer wants it, AND

2) If it changes the product or service, AND

3) If it is done right the first time.

b. Non-Value Added

Any activity that does not meet all three criteria provided above is considered Non-Value added. In many cases, Non-Value Added activities require a great deal of the cycle time. In service processes, most of the work is non-value added because of rework due to errors, omissions, delays in earlier parts of the process and the complexity of the tasking.

c. Non-Value Added Essential

Non-Value Added Essential is an activity which doesn't meet the criteria for Value Added, but it is required and cannot be changed by the customer, by the corporation, or by law (for example, Federal Acquisition Regulation (FAR), Defense Federal Acquisition Regulation (DFAR)).

Figure 4 provides a visual example of Value and Non Value Added activities in a process. The green boxes indicate a value added step and the gray are non-value added.
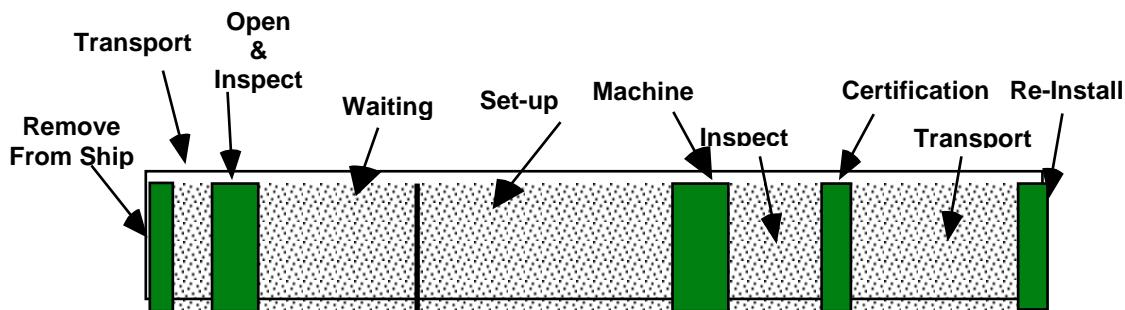
Figure 4. Value Added/Non-Value Added Illustration
(From NSWCDD Lean Event)

The focus at NSW CDD is <u>not</u> on t he val ue-added ste ps or t he people per forming them. Instead, the focus is to remove barriers and better support the people doing the work.

d.   Process Customer

When examining any pr ocess or acti vity, we must first de fine the c ustomer. At the NSWCDD, t he i mmediate cust omer is the funding source (Program Exe cutive Offices (PEOs), Product Area Direct orates (P ADs), External Funding Str eams). However, ultimately, the taxpayer and the War Fighter are our customers.

e. Val   ue Stream

A Value Stream de fines the exis ting proce sses and pos sible waste reducti on opportunities (Bar, Rus sell & Fina more, 2006). It consists of all actions currently required to change a product or   servi ce t o meet cu stomer dem and and ex pectations and then considers what areas of the process could be eliminated.

f.   Strategic Plan

The development of the Strategic Plan was accomplished by N SWC Dahlgren Leadership and the Lean Deploym   ent Team . It custo   mized the Lean Enterpris   e Transformation Approach for each organization based on unique requirements:
- Strategy and Vision
- Goals and Objectives
- Population, Attrition, Overtime, Growth
- Assessed Lean Six Sigma Maturity Level (Physical and Cultural)

The deliverables targeted whic h were the most be neficial Val ue Streams t o address first; developed a Lean Deployment Model; provided the Initial Orga nizational Assessment; and determined the Implementation Plan.

The following represents NSWCDD's view of the Strategic Plan. E ach section of this illustration will be defined.

Executive Planning Session
- Organization Assessment
- Implementation Plan   - Goals and Objectives
- Lean Deployment Model   - Analysis

Value Stream Analysis
-Baseline Conditions   - Current State
-Improvement Metrics - Future State

VSA

Rapid Improvement Plan

VSA

RIE
(Rapid Improvement Event)
-Transform the Value

Projects
-Right Sized Equipment (3P)
-Six Sigma (DMAIC)

Just Do It
-No need for approval
-Need to capture for

Figure 5. NSWCDD Strategic Plan

(1) The Strategic Plan lays out the desired goals and objectives that the organization is trying to achieve. In order to execute the strategic plan, a top-level Value Stream Map should be done for each organization.

(2) To produce a Value Stream Map, one must:

- Identify the Value Stream for the product or process being worked.
- Map the current state. Identify all the actions that don't create value.
- Develop and map *concepts* for t he future state wit h st akeholders and pr ocess participants.
- Define actions and drive toward the future state.

Figure 6 represents a current state Value Stream Map of an e vent run at NSWCDD. The red blocks r epresent either Non-Val ue Added ste ps or Non- Value Adde d Esse ntial steps.

Figure 6. Current State Value Stream Map at NSWCDD
(From NSWCDD Lean Event)

Figure 7 is the same event, but the ideal state of that event, with the removal of the
Non-Value Added steps with the process:
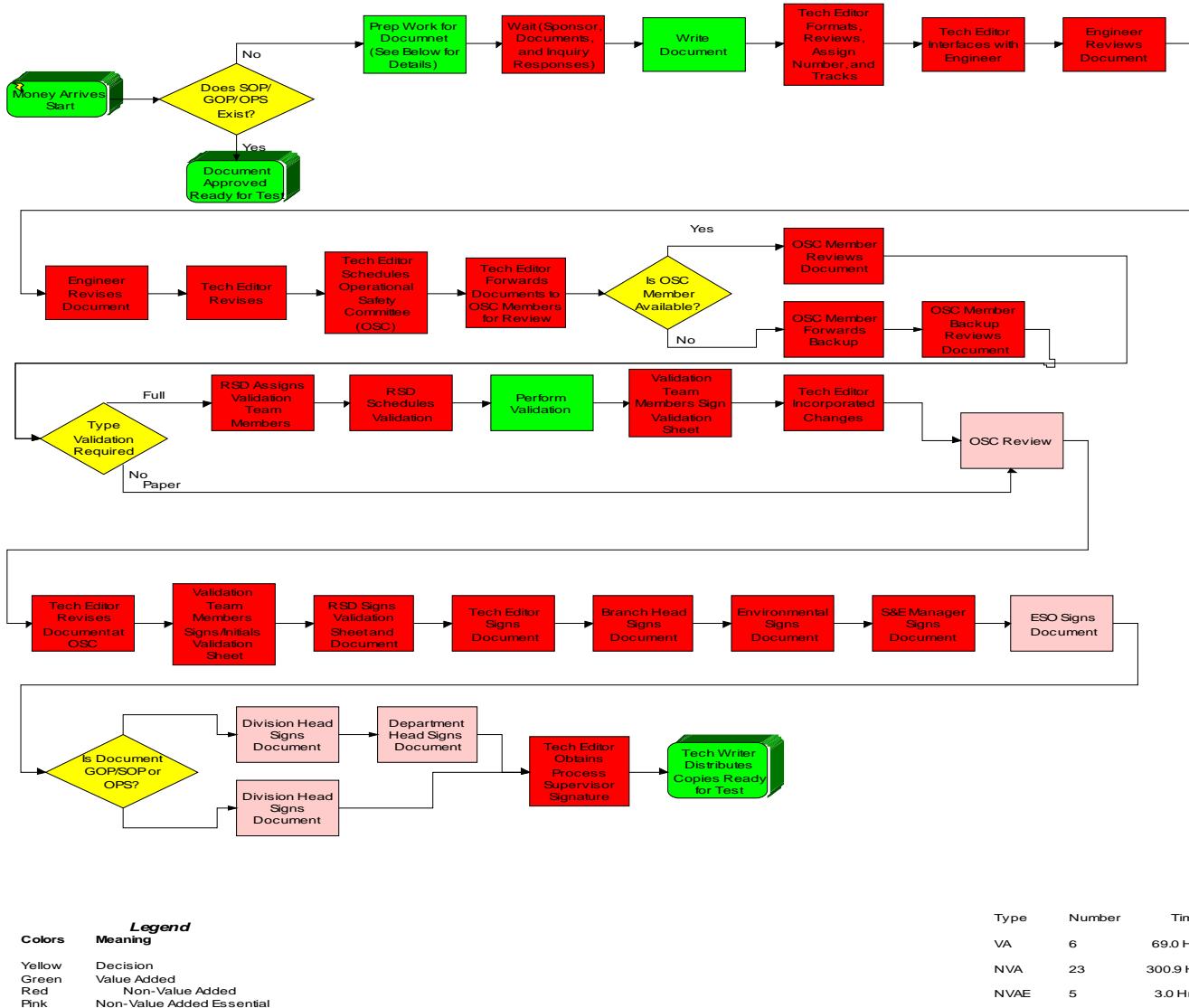
Figure 7. Ideal State Value Stream Map at NSWCDD
(From NSWCDD Lean Event)

      (3) Producing a Value Stream Map in conjunction with conducting a VSA results in a RIP during which areas are identified for potential improvements and subsequent events. During the VSA, the Value Stream for the product or process being worked on is identified. The current state must be mapped and all the actions that don't create value must be identified. Concepts for the future state with stakeholders must be mapped. Actions and events must be defined and driven toward the future state. The 10 Steps in a VSA at NSWCDD are provided in Table 1, as follows:

Table 1. 10 Steps in a Value Stream Analysis
(NSWCDD Value Stream Analysis)

STEP 1:	Define the boundaries
STEP 2:	Define the value
STEP 3:	Define the outcome
STEP 4:	Walk the product/service flow
STEP 5:	Observe and gather data
STEP 6:	Map the Value Stream ▪ Customer ▪ Product flow ▪ Information flow
STEP 7:	Analyze Current State
STEP 8:	Develop Ideal State
STEP 9:	Develop Future State map
STEP 10:	Develop action plan and tracking

The events that follow a VSA include the RIEs, Projects and Just-Do-Its.

(4) RIE involves i   ndividuals that w ork in th e ar ea fo r improvement with the assistance of a Lean Green Belt. Management does not dictate the outcome; mana gement e mpowers the indi viduals that have the f irst hand know ledge to identify areas for change. Th ere are six to ei ght indivi duals per t eam and a n RI E t akes approximately three weeks of pr e-work, three to five da ys for the event, and approxi mately three weeks after t he event to   enact th e id entified action s.   During the even t, th e te am defines the old pr ocess, exa mines t he wa ste, determines what is va lue-added, non-value added, and non- value added essential. During an RIE, the team develops an "i deal state", a perfect worl d picture, a nd a " future state". Bre akthrough it ems, thi ngs that are idea l or concepts that need to be developed that would completely change the way of doing business will come fr om the brai nstorming sessions of developing the Id eal St ate. The future state defines what the new pr ocess will be at the conclusion, th e new streamlined process. The team may also opt t o r un ot her eve nts or pr ojects as a result of what has bee n disc overed

19

during the RIE. At the end of that period, the new "pr ocess" takes e ffect. Ideally, t he new process would be instituted almost immediately. Changes are implemented during the RIE

(5) A Project is more complex than an RIE and typically takes six months or lo nger to complete. A project can occur across   Departments or Facilities, and may require additional expertise from Blackbelts.

(6) A Just Do It is somethi   ng that any employe e can i nstitute immediately or wit   hin 30 days.   I   mplementation opport unities requi re li mited coordination.

(7) Key metrics are   the measurements that will help track the success of the implementation and whether the plan needs to be revisited. For example, during an event it appear ed that removing the step of   a hand entered requ isitions into an excel spreadsheet by the tec hnicians would save ti me i n the p rocess. Ho wever**,** when the process was revisited, more time was actually being spent trying to tr ack the requisitions in the cumbersome financial system.

g. Imple   mentation of Lean-Six Sigma

"Understanding your customer needs are crucial be fore you begin a ny LSS event, you start with   your custom er and L ISTEN, LIS TEN, LIS TEN! Leadership m ust participate in VSA a nd Rapid Improvement Te ams. Empl oyee participation is imperative and s hould not cre ate j ob ris k." (NSWC DD L ean T raining, May 2003) N   AVSEA has instituted a requirem ent that all NAVSEA em ployees must participate in at least one event before 30 September 2008.

In the implementation of LSS, a c ulture c hange is sought and e mployees must be encouraged to:

- Think differently;
- Work differently;
- Ask questions and CHALLENGE THE STATUS QUO;
- Make decisions based on Facts and Data.

The biggest drawback faced in most events is the unwi llingness of some individuals to change. There have been positive experiences with LSS at NSWC DD, Combat Direction

20

Systems Activity (CDSA) Dam Neck, and NSWC Indian Head within contracts and in the technical de partments. Thr ough our researc h a nd per sonal experi ences, it has be come apparent that LSS can help contracting professionals take a closer look at some burdensome processes within the existing legal and regulatory framework.

At NSW CDD, the volum e of work consis tently exceeds the capacity of the Acquisition W orkforce. This has had a signif icant negati ve im pact with an increase in PALT, increased compensatory time, and increased customer concerns.

There is cur rently an issue DoD wi de, as the acquisition workf orce ages. This i s having a n i mpact at NSWCDD. As ve terans retire , t hey are taki ng experie nce an d knowledge with them. Several crucial things have happened as a result of these retirements:

- Compensatory time usage has increased; NS WCDD u tilized one half a labor year in one mont h alone, at an i ncreased c ost to the Governme nt and a n added stress on an already stre ssed workf orce. The ability to reduce compensatory time is crucial to NSWCDD both on a cost and cultural level.

- Procurement Acti on Le ad Ti me (PALT) ha s incr eased in an organization that prides itself on mai ntaining excellent PALT averages; PALT i s an existi ng tool that will help us evaluate whether we are, in fact, reducing the time it takes us to make a contract awar d. As t hose award ti mes are reduced, our customer satisfaction may improve.

- There is currentl y a push at NS WCDD to "do more with less" (Admiral Sullivan) a nd that ma kes it difficult to hire experienc ed individuals , for cing NSWCDD to rely heavily on the Contract ing Inter n pr ogram. Be cause acquisition workforce member s re quire a grea t deal of tra ining, the le arning curve is enormous (at least two year s before Def ense Acquisition W orkforce Improvement Act (DAWIA) Level II certifi cation) a nd alr eady ove rworked Specialists have to train Interns or inexperienced new hires.

- Customer sa tisfaction ha s bee n di minished of la te, again i n an or ganization whose primary focus ha s always bee n on serving the War Fighter to the utmost of its' abilities. The W ar Fighter is truly why we work . Our focus must always be on the War Fighter a nd how we ca n be a true business partner, assi sting them

21

in furthering their mission while staying within the guidelines of the FAR and DFARS.

- Cost – Cost is an important factor due to the dwindling budgets. It is crucial and we have been encouraged by Admiral Sullivan to "do more with less." (Admiral Sullivan email, 28 July 2006.)

The combination of LSS provides us with the appropriate tools to address some of the issues we face in the procurement process: rework, non value-added steps, increased PALT, increased usage of compensatory time, and decreased customer satisfaction. The first step in the process that should be analyzed is the pre-award procurement process. Based on the LSS foundation provided in this chapter, the pre-award procurement process could be improved in both quality of work and timeliness by utilizing the tools and methods of LSS. Not only could this improve the process, it could also improve the quality of life for the Contract Specialist. Additionally, it could enhance customer satisfaction due to the elimination of waste in a process that is heavily inundated with laws and regulations.

The importance of ensuring that Lean changes are viewed as "Transitional Change vs. Transformational Change" (Ackerman-Anderson, 1996) and the appointment of appropriate teams will be addressed.

This Chapter provided an overview of Lean-Six Sigma. The following chapter will explore the Naval Surface Warfare Center Dahlgren Division Contracts Division's organization and mission.

III. NSWCDD CONTRACTS DIVISION (XDS) –
ORGANIZATION AND ACTIVITIES

A. BACKGROUND

The Dahlgren Laboratory Contracts Divi sion falls within XD Departm ent. The Chief of the Contracting Office is the proces s owner. The strategy of XDS is supported by two operational beliefs:

- **Primary (XDS Mission Statement):**   The Dahlgren L aboratory Contracts Division m ission is to SUPPORT a nd perpetuate the NSWCDD Mission Statement; COMMIT to the highest personal and professional standards; MAINTAIN Custom er Satisfactio n through communication and sound business practices; PROVIDE a desirable and rewarding work environm ent; COMMIT to continuous im provement of processes; and P ROVIDE proactive response to current Acquisition Initiatives and Customer Concerns.

- **Secondary (XDS Vision Statement):** The vision of the Contracts Division is to be recog nized as an Acquisition Center of E xcellence in meeting th e core mission of NSWCDD and its tenants.   Responsiveness to the needs of our customers within the established regu lations, while exercising sound business practices, is our primary focus. The pr ocurement workforce should be seen as a valued team m ember working in support of the NS WCDD m ission. W e actively seek open communication and ex change of ideas with technical customers and with industry. Innovativ e practices are em ployed to ensure continuous process im provement and flex ibility to address current custom er needs and concerns.

B.   CONTRACTING PROCESS

The contracting p rocess is a com plex, somewhat subjective, assem blage of activities with varied in puts from a wide ra nge of sources. There are m any factors that influence the contracting process including, but not lim ited to, regulations, contract type,

cost, funding, complexity, time constraints, and a retiring contracting workforce. For the purposes of this pap er, only the p re-award co ntract proc ess will b e exam ined. The following provides a basic overview of the actual process of a contract requirement:
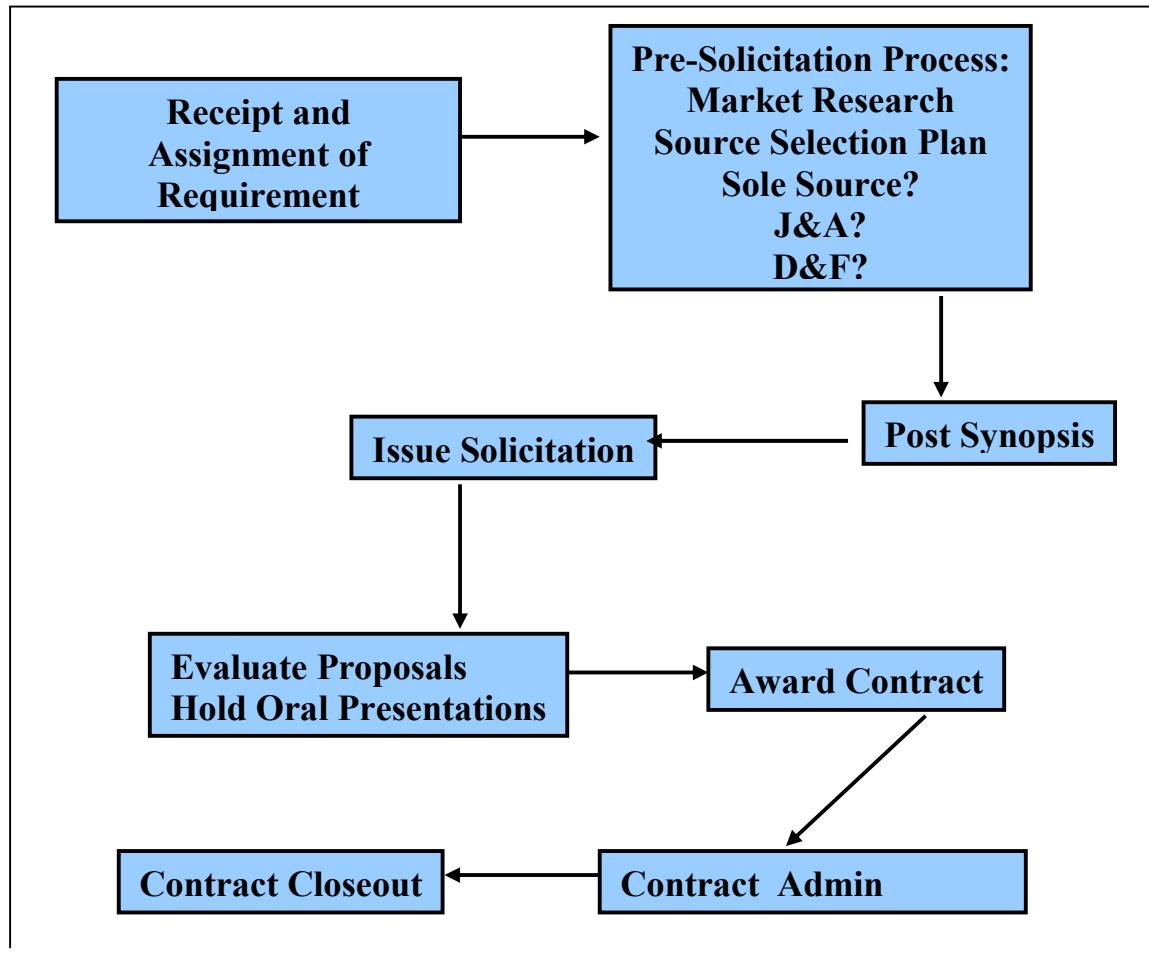
Figure 8. Contract Requirements Process

C.   CONTRACTS DIVISION (XDS)

There are three contracting branches in XDS, with each having a unique custom er base. The processes within each   branch   include sim plified acquisition proced ures (<$100,000), large com mercial and non-commer cial contracts (>$100,000), contract administration, and, to a certain extent, contract closeout. The workforce is com prised of one Branch Manager (Contracting Officer),   three to four Team   Leaders/Con tracting Officers per branch, Procurement Clerks and Technicians, and Contract Specialists.

During the past five years, XDS has expe rienced a large nu mber of retirem ents, which resulted in a huge lo ss of knowledge and experience. Further, due to hiring constraints, XDS has hired prim arily Navy Acquisition Interns w ith little to no experience. These same hiring constraints are forcing the Technical Departments to seek more Contractor support, ther eby increasing the num ber of contracting actions submitted to XDS at a time of diminishing qualified resources.

D. CUSTOME R

XDS has a diverse custom er base, pr oviding contracting support to seven departments located at NSWCDD a nd tenant commands at NSWC DD, including AEGI S Training and Readiness Center (ARTC). NSWCDD is a research laboratory and, as such, requirements and funding com e fr om a m ultitude of sou rces. XDS also p rovides contracting support to the CDSA Dam Neck, and their tenant commands, such as Joint Forces Command (JFCOM) when appropriate.

After participating in Lean Events hosted by NSW CDD custom ers, it has been made apparent that there are som e custom er frustrations at the dim inished quality of contract support due to a lo ss of ex perienced resources, in creased requirements, and the need to continually train new interns. It is the o pinion of this team that these frustrations are exacerbated by the mandatory usage of acquisition systems and burdensome reporting requirements, which m any tim es make the C ontract Specialist's job m ore difficult and time consuming. The following is an overview of the systems utilized by the Specialists:

- Standard Procurem ent System (SPS, also known as PD2). This tool was created to automate and standardize the procurement process throughout DoD. SPS now links logistics and financial syst ems to enable accurate tracking and reporting of financial data throughout the contracting processes.

- Seaport-e. Seaport-e "provides a sta ndardized m eans of issuing com petitive solicitations amongst a large & diverse community of approved contractors, as well as a platform for awarding & m anaging performance-based task orders. This unified approach allows SeaPort-e service procurement teams to leverage

their best w ork products, practices, & approaches across the Navy' s critical service business sector." (Seaport-e website, June 2008).

- Federal Business Opportunities (FedBizO pps). This is the single point of entry for NSW CDD opportuni ties outside Seaport-e.   Anything that the government purchases that exceed s $25,000 m ust be posted on the FedBizOpps website, unless it is set-asid e for an 8(a) firm . Vendors then can review all the procurements being proposed and respond accordingly.

- Wide Area W orkflow (WAWF). W   AWF is a "contracting DoD   -wide application designed to elim inate pa per from the receip ts and acce ptance process of the DoD contracting lif ecycle. The goal is to enable auth orized Defense contractors and DoD personnel   the ability to cr eate invoices and receiving reports and access contract related docum ents." All vendors m ust submit their invoices through WAWF (WAWF Website, July 2008).

- Electronic Docum ent Access (ED A). EDA is an "online docum ent access system designed to provide acquisition related inform   ation for use by all of the Departm ent of De fense." This en ables S pecialists to conduct market research by viewing what other DoD   organizations have procured from the same vendor and at what price (EDA Website, July 2008).

- Federal P rocurement Data System , Ne xt Generation (FPDS-NG). Contract Specialists are required to use FPDS-NG   for reporting and classifying every contract action (modification and awards) in order to provide a view of federal spending. "The Government has a compelling need to understand where…tax dollars are spent. Collecting data about Government procurements provides a broad picture of the ov erall Federal acquisition process." (FPDS-NG website, July 2008).

Each of thes e systems are valuab le tools, however, there are tim es when the lack of training and knowledge sharing can create   serious constraints in the contracting process. The Researchers believe that th   e developers of these system   s don't always understand the end-user requirem ents, therefore making many of these s ystems difficult to utilize. These systems also can h ave a major impact on custom ers. Of tentimes these

systems experience downtime and can hold up a procurement. It has been the experience of the research team that while customers may not understand the application of these systems, they realize these systems can delay the award of their requirement, this consequently creates a dissatisfied customer.

E.   APPLICATION OF LSS

We believe that LSS can be applied within the pre-award contracting process to streamline and improve acquisition processes, and to increase customer satisfaction, reduce cost and reduce lead-time. As already noted, we also believe that the pre-award contracting process is the most immediately beneficial area to examine. This is the area that affects the customer most: the timely award of their contract actions. Several LSS events have been held in the Technical Departments seeking a streamlined approach to submitting complete, correct requirements packages, reviewing the nomination of Contracting Officer Representatives (CORs), and even the establishment of a Contracts Liaison or Engineering Liaison Office. Although XD has completed a knowledge sharing/brainstorming event, XD has not completed an event surrounding the "leaning and standardization" of any procurement process.

Based on our experience, reading, and participation in other Lean events, we believe that LSS should be applied within the pre-award contracting process with the establishment of a VSA team. The key to success with LSS is choosing the right individuals to participate on the team. In order to effectively address the pre-award contracting process, this team will need to consist of Contracting Officers and Contract Specialists from all three branches of the NSWCDD Contracts Division, a Defense Finance and Accounting Service (DFAS) representative, technical customers, vendor representation and policy office representation.

The VSA team should be empowered by the Value Stream Champion (Chief of Contracts), who should have the following key responsibilities:

- Communicate the expectation that the VSA and the ensuing events are a priority; and

- Expect and be available for status briefings.

With three separa te bra nches in Co ntracts and several different pr ocesses within each branch, the Champion's support should be especially crucial for success.

The VSA s hould painstaking ly define each step in the p re-award co ntracting process, ens uring the in clusion of a ll the v ariations within branches. Once the v arious processes are mapped, they will b e broken in to more m anageable pieces like RIEs, Just Do Its, or full blown Projects.

Just Do Its should be executed within 30 days of the conclusion of the VSA. RIEs should be scheduled quickly following the VSA to m aintain the support and momentum from the VSA. The major ity of the stream lining and standardizing of the process should occur within the RIE. As such, the RIEs are crucial to the success of LSS in the p re-award contracting p rocess. At the conclusion of the RIEs, the new process would be in affect.

We believe that through LSS, the procur ement process should be stream lined and standardized. The standard ization alone sho uld he lp a lleviate sev eral cus tomer complaints of inconsistencie s. Standardization should m ake it m ore logical for the technical customers and should make it easier for them to prepare a requirements package with a m arkedly increased th roughput rate. T he frustratio n and tim e saved from the technical side should increase custom er sati sfaction. Standardiz ation and consistency should help both the relatively inexperienced interns and experienced Contract Specialists more quickly grasp the procurem ent requirement, thus reducing cycle tim e and Contract Specialist frustration.

Streamlining the procurem ent process shou ld be within the constrain ts of the Non-Value Added Essential steps. The m yriad of regulations will have an affect, but we believe there will undou btedly be parts of the process that will be consid ered Non-Value Added. These Non-Value Added steps shoul d be rem oved from the process, which should provide additional time savings.

By utilizing the tools p rovided by LSS, the pre-award pro curement process should be improved a nd stream lined, custom er satisfaction should be i mproved as cost would be reduced and lead-time would be decreased.

F. LAUNCHING LSS

There are various app roaches for la unching LSS program s in acquisition, contracting and procurem ent pr ocesses; sp ecifically the p re-award procurement process. According to inform ation presented by the Chief of the Contracts Office at NSWCDD, NAVSEA currently has a requirem ent that 100% of the workforce participate in at leas t one Lean event before the end of the Fiscal Year. This requirement alone establishes the necessity of LSS at NSWCDD.

Based on our readings, experience and part icipation with o ther Lean e vents, we believe that the Cham pion m ust educate the em ployees as to the benefits of Lea n to further engage the workforce's supp ort,. This education shoul d use actual ex amples of success lo cally and f rom other activ ities tha t could pos itively im pact the Contract Specialist's workload. W e think that si mpler approaches to achieving buy-in, for example, merely requiring a Defense Acquisition University (DAU) online course, would be a dismal failure. W e think that the foru m of choice should be the weekly W ednesday morning training sessions m ade available to all of XDS. The form at of these training sessions wo uld utilize s mall groups, Lean Offi ce Green Belt trainers, and illu strative exercises. In our expe rience, th e acquis ition workf orce is bom barded with tra ining, which is why the LSS training should be real-time, applicable, and engaging.

We think that rewarding m embers of the w orkforce for innovative concepts, applications and positive par ticipation through LSS would serve as a motivation to an already burdened group. It would also incentiviz e others to become part of a solution, to look at an is sue from a new angle, and to be willing to accept change fo r the promise of an improved workload.

In our opinion, the creation of a strong, va lid Contracts Division Policy Office should be beneficial to the a pplication of LSS i n the procurem ent process. The Policy Office is responsible for various functions aff ecting the contract workforce, including the

dissemination of changes to policy and m aintaining th e Contrac ts Intran et, w hich provides easy access to contracts practices, procedures and ins tructions to both the technical customer and contra cts personnel. So we think that the Policy Office should also be responsible for establishing/publis hing best practices and standard operating procedures (SOP) and make them available at a Division Level. This should alleviate a great deal of the uncertainty about contracting processes an d should begin to change the culture to one of standardization.

Through the Policy Office, cross-functional teams could be for med to continually revisit SOPs. W hile service on these team s shouldn't be re quired, participation on the teams should be valued by the organization in a tangible way, (i.e. on the spot awards, public recognition at Contracts Division events, t-shirts). W e think th is would serve in breaking down som e of the "our way is the better way" culture between branches. It would assist in the sharing of infor mation and would, over tim e, create a "community" culture.

G. ADVANTAGES/DISA DVANTAGES – LSS

With the introduction of any ne w idea or concept, one m ust consider the advantages and disadvantages of that c oncept. There are known advantages and disadvantages of applying LSS methodologies. These same advantages and disadvantages are likely to affect its application to the pre-award contracting process.

To fully gain any available benefits fr om LSS, one m ust first acknowledge the disadvantages of th is concept. Th e res earchers have experience d th ree m ain pote ntial disadvantages: (1) the pre-dete rmined outcome of an event; (2) the lack of auth ority given to team s by the Cham pion; and (3) the la ck of follow through at the conclusion of an event.

1. It becomes apparent quickly to an L SS team when the Champion has already decided the outcom e for the team. Th is has an obviously negative im pact on that event, but also on the team members' view of future events. For example, there was an event held in one of the technical custom er's facility to review

30

preparation of the procurem ent package to be sent to Dahlgren for award. In our opinion, the right individuals were in the ro om with the exception o f the Champion who not only stayed the enti re tim e and was quite dogm atic, but allowed no progress in the event unless his opinion was determ ined the right path. The sam e Cha mpion briefed out each day, ensuring that CDSA management (Captain, T echnical Director, and D epartment Head) heard only his viewpoint. In our op inion, there was nothing Lean that happened in that event. It w as merely a m eans of th e Champion changing the process to suit him and wasting a week of the team's time.

2. A Simplified Acquisition Procedure (SAP) event was he ld in which the right people were gathered in a room, but the team was not truly given the authority to change th e process. The team deve loped the future state and was ready to implement, but the Cha mpion at th e tim e did not em power those changes. That event was two years ago and not one recommendation was adopted. The team was not perm itted to put the "Simplif ied" ba ck in Simplif ied Acquisition.

3. During the same event, there were to be several s pin-off RIEs and Just Do Its that would have standardized the SAP package across the Division, alleviating uncertainty in what the SAP package wa s sup posed to in clude and in what order. It was never done. This resu lted in increased m aterial and opportunity costs and lost time. The advantages of the proper use of LSS are many, but the most easily identified ad vantages in applying LS S to NSWCDD's pre-award procurement issues should include:

1. Decreased P rocurement Action Lead Tim e: The elim ination of unnecessary steps will certainly decrease the am ount of tim e required to award a con tract at NSWCDD;

2. Decreased Compensatory and Overtim e for Specialists: The extensive use of overtime and compensatory time should be drastically reduced as a result of a streamlined, documented process;

3. Decreased Cost to th e Command: Th e pre-award procurement process has a command wide im pact. By i mproving throughput and standardizing a process, the technical custom er shoul d get their requirem ent in less tim e, saving both technical and contractual workforce time.

4. Decreased uncertainty due to th e standardization of the process: T raining of new hires/interns should b ecome more straigh tforward due to standardization of the process;

5. Inter Branch Teaming: Standardization, should enable one contracts branch to assist another contracts branch during peak times;

6. Improved customer satisfaction: A bett er understanding of the standardized, streamlined process should im prove cust omer satisfaction. There should be less frustration because of better understanding and reduced cycle times.

7. Improved Contract Specialist m orale: The stream lined pre-award p rocess should alleviate some of the frustration experienced by Specialists, and should assist in improving the corporate culture within XDS.

H.   CURRENT STATE OF PRE-AWARD PROCUREMENT PROCESS

LSS provides NSW CDD with the tools   and methodology to rem ove the waste from the pre-award procurement process and to standardize the pr e-award procurem ent process. Th e following chapter addresses a reasonable plan of ac tion for implementing these ch anges and how LSS principles can b e applied to improve the current business practices in the pre -award procurement proc ess, ultimately providing a potential Fu ture State for the pre-award procurement process. To introduce the subsequent chapter and to provide the Current State, Figure 9 on the fo llowing page illustrates the current business model for the pre-award contracting process.

Receipt of Technical Data Package → Procurement Milestone Agreement → Sole Source

Sole Source — no → Services — no → Hardware Contract

Services — yes → Seaport-e

Sole Source — yes → Sole Source J&A

Seaport-e → Synopsize or Announce in Seaport

Sole Source J&A → Synopsize or Announce in Seaport

Synopsize or Announce in Seaport → DD254 GFE CDRLS OCI

DD254 GFE CDRLS OCI → Prepare Solicitation → Tech Review of Solicitation → CO Approval of Solicitation → Legal Approval of Solicitation

Legal Approval of Solicitation → >$1M >$5M Seaport

>$1M >$5M Seaport — no → Issue

>$1M >$5M Seaport — yes → CRB Approval of Solicitation → Issue

Issue → Receive Proposals → Oral Presentations

Oral Presentations — no → Tech Eval of Proposals

Oral Presentations — yes → Schedule Orals → Conduct Orals → Tech Eval of Proposals

Tech Eval of Proposals → Spec Eval of Qualified Proposals → Obtain Data from DCAA and DCMA → Review Subcontracting Plan → Price Cost Analysis for Prime and all subs → Sole Source

Sole Source — no → Ammunition/Expl

Sole Source — yes → Weighted Guidelines → Ammunition/Expl

Ammunition/Expl — no → Verify CCR, ORCA, Parties Excluded

Ammunition/Expl — yes → PreAward Safety Survey → Verify CCR, ORCA, Parties Excluded

Verify CCR, ORCA, Parties Excluded → Specialist writes Business Clearance → Sole Source

Sole Source — no → Receive Funding

Sole Source — yes → Obtain Certificate of Current Cost & Pricing Data → Receive Funding

Receive Funding → Negotiate → CHINFO or Good News as appropriate → Issue COR Letters → Prepare Award Document → Legal Approval of Award Document → KO Approval of Award Document → Contractor Approval of Award Document → Distribution of Contract

Distribution of Contract → Letters to Unsuccessful Offerors

Figure 9. Pre-Award Procurement Business Model

33

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IV. ANALYSIS OF THE FUTURE STATE OF THE PRE-AWARD PROCUREMENT PROCESS AT NSWCDD

A. INTRODUCTION

The contracting p rocess is a com plex, somewhat subjective, assem blage of activities with varied inputs from a wide range of sources. While contract adm inistration and contract closeout are very im portant parts of the proces s, it is the amount of time required in the pre-award procurem ent process that, potentially, has a profound affe ct on customer satisfaction. F or that reason, Lean in the Pre-Award Procurem ent Process will be analyzed to assess if this is the appropriate tool to improve customer satisfaction.

B. PRE-AWARD PROCUREMENT

When a pre-award package is received, the following issues must be considered:

- Requirement definition and description
- Supplies and/or Services
- Supplies & Services associated with Research and Development (R&D)
- Construction – Architect and Engineering (A&E) Services
- Sole source or competitive acquisition
- Small Business, Educational Institution, or Large Business
- Subcontracting possibilities
- With or without Options
- Cost Analysis or Price Analysis
- Uniform Contract Format (UCF) Section M: Evaluation Factors of Award
- Basis of Award along the Best Value Continuum: Best Value Trade-Off or Lowest priced/technically acceptable (LPTA)
- Source Selection Plan (SSP) elements
- Procuring Contracting Officer (PCO) and Administrative Contracting Officer (ACO)
- Program Manager (PM) and Program Executive Officer (PEO)
- Dollar thresholds: $100K, $550K, $5M, $30M, $75M, $100M

According to the NAVSEA presentation given by Captain Kevin Wheelock to the NSWCDD Contracts Division in 2008, there are approxim ately 3,456 total possible initial com binations/permutations. W hen one then considers the 21 different contract types, there are a to tal of 72,576 possible com binations. T his can be overwhelm ing to new interns and experienced Con tract Spec ialists, esp ecially withou t any so rt of standardized processes in place.

C.   PLAN OF ACTION FOR IMPLEMENTING LSS APPROACH

Given the many options, choosing the most appropriate path forward is easier said than done. The researchers felt that m anagement approach and the establishment of the LSS teams would be the two m ost crucial steps in the process of implementation of Lean Six Sigma in the pre-award procurement process.

Transitional change "is the achievement of a known new state over a set period of time." (Ackerm an-Anderson, 1996) Lean Si x Sigm a provides thos e tools required to analyze im pact on the organization and the Value Stream Analysis and the Rapid Improvement Plan provide a logical plan of action to guide the implem entation. Transformational Change doesn't gradually re veal the future state and usually doesn't involve a variety of m embers from the orga nization to determ ine what that new world will look like. LSS pr ovides the o pportunity for less dis ruptive trans itional chang e to occur, providing a great chance of success.

"A team's reputation can become a self-fulfilling prophecy: "good" teams get the pick of pro jects and p eople…" (Ancona, 1990). The access and respect of u pper management can help a team align to its goa ls and ensure the success of the team . A comprehensive team m ust be estab lished. Th is is a te am that "gets the inform ation needed, but does not get stuck in perpetual research." (C onstantine,1993). Thus, to avoid an un successful event, we believe th at an em powered and respected team must be selected. An ideal team mem ber would have the exp erience and respect of the organization. These team m embers m ust be open-m inded about the possibility of establishing and/or refining the procurem ent processes. The m ost experienced m ember

of contracts would not be an effective member of an LSS team if they were not willing to openly review and participate in changing a process.

The researchers think that Pre-Award should be grouped into four categories, with acquisition values greater than $100,000:

1. Seaport-e
2. Commercial
3. Non-commercial Hardware
4. Sole Source Services

The researchers further believe that Seaport-e should be the area in which the most immediate time and cost savings could be achieved. Seaport-e " provides a standardized means of issuing competitive solicitations amongst a large and diverse community of approved contractors, as well as a platform for awarding and managing performance-based task orders. This unified approach allows SeaPort-e service procurement teams to leverage their best work products, practices, and approaches across the Navy's critical service business sector" (Seaport-e website, June 2008).

Seaport-e has a goal of 90 days, for any value Task Order, from receipt of a complete requirement package to Task Order award. The average large contract outside of Seaport-e and valued over $10,000,000 has an average time to award of 180 days. Because of a lack of knowledge and standardization, some Contract Specialists are exceeding both the Seaport-e goal and the Large Contract goal.

NAVSEA has directed that ALL competitive services requirements be issued through the Seaport-e portal; therefore, the majority of new awards at NSW CDD are made through the Seaport-e portal. It has also been determined by both management and workforce that there is a large variance in how Contract Specialists utilize the portal. Seaport-e was established to be more efficient, but through the lack of common processes and knowledge, many contract specialists are over complicating a streamlined method for these large procurement actions. This over complication is due to a number of factors, but in our opinion it is primarily due to:

- Lack of Seaport-e training; and

- Varying corporate cultures ("I am my position" to "The enemy is out there" (Senge, 1990) within the Contracts Division makes Division wide support of mandatory best practices tenuous. Senge addresses "The Myth of the Management Team" It becomes so important to keep up the image of perfection that they "seek to squelch disagreement". When there is disagreement, it's usually expressed as blame and further polarizes opinion.

D.   VALUE STREAM ANALYSIS

Due to the majority of awards resulting from Seaport-e as the primary procurement tool, the researchers think it is best to apply LSS within the Seaport-e pre-award contracting process. The establishment of a solid VSA team is essential to the success of the LSS application. Because of the many issues that NSWCDD and other Warfare Centers are encountering, the team should consist of:

- A Certified Black Belt;

- A Certified Green Belt;

- Experienced Seaport-e Contracting Officers from all three NSWCDD contract branches;

- Experienced Seaport-e Contract Specialists from all three NSWCDD contract branches;

- Defense Finance and Accounting Service (DFAS) representative;

- Various experienced Seaport-e technical customers that are supported by all three NSWCDD contract branches;

- Seaport-e vendors representation; and

- NSWCDD Contracts Policy office representation.

The Chief of Contracts, VSA Champion, should kick off the first day of the VSA communicating the expectation that this VSA and the ensuing events will be considered a top priority. The Champion should be in attendance for status briefings at the conclusion

of each day as well. With three separate branches in Contracts and several different processes within each branch, we think that the Champion's support would be especially essential for success.

As previously mentioned, the VSA should painstakingly define each step in the Seaport-e pre-award procurement process. The Solicitation portion of the Seaport-e process includes the following requirements/decisions:

Table 2. Seaport-e Pre-Solicitation Process
(From Seaport-e Task Order Checklist)

1)	Contract listed in WINDOWS VERSION OF THE SUPPLY DEPARTMENT CONTRACT ACTION TRACKING SYSTEM WINSCATS
2)	Advise Task Order Manager and technical evaluation team to register in the Seaport-e portal
3)	Industrial Logistics Support Management Information System (ILSMIS) Requisition or Memo - If DIRECT CITE funds get copy of Work Request/Document
4)	Statement of Work/Specifications [FAR Part 11/DFARS Part 211] - Can it be structured as Firm Fixed Price or to include performance-based elements? - Is enough detail given on travel? (if applicable)
5)	Independent Cost/Price Estimate [NSWCDLINST 4280.1(series)]
6)	Documentation to prepare UCF Section H (Special Contract Requirements)

7) Documentation to prepare UCF Sections L (Instructions, Conditions, and Notices to Offerors) and Section M (Evaluation Factors for Award) in lieu of formal Source Selection/Evaluation Plan - Should be reviewed with Contracting Officer
8) Acquisition Plan Modification - if order will be $50M or more (all years) or $25M (any fiscal year); or 10M for R&D. - Acquisition Plan for Seaport-e has been approved. - For individual Task Orders that exceed the Acquisition Plan thresholds, XDS memo 04/46 dated 20 Aug 04 outlines required supplemental information.
9) DD Form 1423 (Contract Data Requirements List) - If no CDRLs, make sure that there is adequate information provided about all required deliveries (Data/Item delivered, when, format, content, distribution)
10) DD Form 254 (Contract Security Classification Specification) - Solicitation copy - original remains with Security until award
11) Task Order Manager Nomination [NAVSEAINST 4200.17C(series)]
12) Approval for furnishing Government Office Space to Contractor Employees [NSWCDDINST 4200.6]
13) Approval to contract for Consulting Services [SECNAVINST 4200.31(series)]
14) Approval for Contracted Advisory and Assistance Services [DoD Directive 4205.2]

15) IT Review/Approval
    < $2.5K Department level
    <$25.0K D12
    >$25.0K   C/D (via D12)
    >$25.0K NAVSEA (for items that are NMCI non-exempt)

16) Small Business Coordination Record FAR 19.501/19.803) addressed in software.   - No hard copy required in file.   - All Task Orders must be reviewed by the Small Business Advisor before development of the solicitation. Additionally, before any Pre-Announcement is published on the portal, the Small Business Advisor must review [XDS Memo Ser 04/46 dated 20 Aug 04]   - Cascading Set Aside requires Chief of Contracting Office (CCO) approval
17) Pre-Announcement Notice – posted through Seaport-e portal (when time permits)

18) Determination and Findings (D&F) for Government Furnished Property [FAR/DFARS/NMCARS Part 45.3/NSWCDDINST 4340.1(series)]
   -   Requires Legal Counsel approval [PM 96-02]
   -   Include copy of the Determination and Findings in Pre/Post-Negotiation Business Clearance

19) Ensure services are performance based and that a corresponding Quality Assurance Surveillance Plan (QASP) is incorporated into solicitation/contract.

20) Non Performance-Based Approval
   -   Issuing an order as non performance-based requires Chief of Contracting Office if total value is <$5 Million
   -   NAVSEA 02 approval required if >$5Mfor total order value.

21) Approval of Overtime Premiums in Cost Reimbursement contract. [FAR/DFARS/NMCARS 22.103-4]
   -   Chief of the Contracting Office approval is required on Cost Reimbursement >$100K
   -   Requires Contracting Officer and Legal Counsel approval [SUPDEPTINST 4200.1(series)]

22) Department of Labor (DOL) Wage Determination (SF 98/98a) [FAR/DFARS Subpart 22.10]   -   Check Service Contract Act Directory of Occupations for Applicable Labor Categories

23) Organizational Conflict of Interest [FAR 9.506]
   -   Requires approval by the Chief of the Contracting Office (CCO)
   -   Requires Contracting Officer and Legal Counsel [SUPDEPTINST 4200.1(series)]

24) Contract Review Board (CRB) Review   -   Task Order requests with an estimated value of $1 Million or greater will be reviewed electronically. CRB and Legal Counsel will have 2 working days (48 hours) to review and comment. Any board member may request that the case be presented in person to the CRB.
25) Prepare Solicitation [FAR 4.803(a)(8)]   -   Draft solicitations must be reviewed/approved by Contracting Officer, Small Business Advisor and Legal before issuance.
26) Pre-Proposal Conference/Site Visit [FAR 15.201]   -   If applicable, insert info in solicitation in Section L and in Notice to Offeror
27) Technical review of Solicitation
28) Contracting Officer approval of Solicitation (Route hardcopy)
29) Legal Counsel Approval of Solicitation
30) Issue Solicitation [FAR 4.803(a)(8)] through the Seaport-e portal
31) Amendments to Solicitation – amendments are issued thru the portal
32) Hold Pre-proposal Conference; prepare minutes to meeting questions and answers, post an amendment with the minutes including questions and answers on the portal
33) Late Proposal Determination [FAR 15.208]   -   Determinations reviewed by Legal [SD10 Memo 00-96 dated 2 Aug 2000]
34) Prepare Late Proposal Letters (send ASAP after approval of Late Proposal Determination)
35) Oral Presentation Notice (If applicable)
36) Make Proposals available to Technical Personnel for evaluation

37) Review proposals for completeness:
   -   Have all amendments to the solicitation been properly acknowledged?
   -   Has UCF Section B Supplies or Services and Prices/Costs been properly completed and if there are price extensions, are they correct? Are totals correct?
   -   Have all offeror representations, certifications and acknowledgments in UCF Section K Representations, Certifications and Other Statements of Offerors been properly completed?

38) Obtain Defense Contract Audit Agency (DCAA) Rate Checks
39) Receipt of Conflict of Interest/Non-Disclosure Statement from Evaluators
40) Review of technical evaluation summaries in the Seaport-e portal   -   Review for accuracy, any issues that need to be resolved

The Bid/Proposal Evaluation portion of the Seaport-e process includes the following requirements/decisions:

41) Perform Price/Cost Analysis [FAR 15.4] - Price Analysis - on all acquisitions to ensure price offered is fair and reasonable - Cost Realism Analysis - Competitive - Cost Realism Analysis - to identify any unrealistically low cost proposals
42) Follow guidance in Seaport-e CONOPS with regard to offerors that do not stand reasonable chance for award.
43) Pre-Negotiation Business Clearance Memorandum [NAVSEA Handbook; NSWCDD Business Clearance Guide] - Obtain approval of Business Clearance prior to discussions or negotiations [S10 Memo 95-15 dated 14 Jun 95] - All negotiated actions > $5M prior to negotiations/discussions or award without negotiations/ discussions - Actions exceeding $5M require CRB approval [XDS Memo Ser 04/46 dated 20 Aug 04] - Actions exceeding $50M require NAVSEA approval Per XDS Memo Ser 04/46 dated 20 Aug 04, Task Orders at a value of $5 Million or less (including all option values) will be documented in a Memo For File (discussion of best value source selection decision and cost realism is still required) - Reviewed by Contracting Officer and Legal Counsel - Document actions taken during negotiations [FAR 15.406-3] Clearances should be reviewed by the Cost Analyst prior to submission to CRB to ensure proper calculations are performed and the cost aspects of the offerors' proposals are understood. [S10 Memo 92-18 dated 14 MAY 92]
44) Cost Premium Approval – Awards to other than low cost, technically acceptable offeror at a premium greater than 10% shall be approved by an individual at next level above the individual making the award decision. Additionally the technical reasons justifying the cost premium will be approved at a minimum of two levels above the TASK ORDER MANAGER. These approvals will be documented in the Pre Negotiation Business Clearance (or pricing memo for file).

The Discussions/Negotiations/Award porti on o f the Seapo rt-e process includ es
the following requirements/decisions:

Table 4. Seaport-e Discussions/Negotiations/Award Process
(From Seaport-e Task Order Checklist)

45) Evaluate Final Proposal Revision   - PCO has to open another round of evaluations in the portal
46) Are adequate and proper funds available for award?

47) Price Negotiation Memorandum (NAVSEA Handbook)
  - Required when a Post Negotiation Business Clearance is NOT required. Provides an audit trail of actions taken during negotiations.
 	
Post-Negotiation Business Clearance Memorandum [FAR 15.406-3; NSWCDD Business Clearance Guide]
  - Actions exceeding $5M require CRB approval [XDS Memo Ser 04/46 dated 20 Aug 04]
  - Actions exceeding $50M require NAVSEA approval
  - Require SD105 review prior to CRB [SD105 memo dated 12 Feb 91]

48) All approved clearances and/or pricing memos are to be stored electronically in the Seaport-e portal in the Package Home – ll02 Files area.
49) Verify vendor's registration is current in Central Contractor Registration (CCR) database before award via Internet http://www.ccr.gov, Electronic Funds Transfer clauses are in nonexempt contracts, and DUNS and CAGE are correct.
50) Obtain final DD 254 from Security
51) Create Task Order in Seaport-e portal
52) Legal Counsel approval of award document [PM 96-02]   - Need to route a hardcopy
53) Contract signed and dated by Contracting Officer   - Email automatically sent to Successful and Unsuccessful Offerors thru portal.
54) NAVSEA Contract Award Report (NAVSEA letter 028/344 dated 5 Oct 94)   - All awards $5,5M or greater

55) Contract Action Report/FPDS-NG [DFARS 253.304-70]   - Prepared in the Seaport-e portal
56) Unsuccessful Offeror Debrief   - When requested, unsuccessful offers will be provided an Award Determination Document (see example in Seaport-e CONOPS). This document will serve as the debrief.
57) Distribution of Order [FAR 4.203]

58) Posting of Contract to Electronic Document Access (EDA)
    - Ensure that document is posted timely
    - Ensure that electronic file was successfully posted.
    - Ensure that electronic file is complete and legible.

59) Schedule Post Award Conference [FAR 42.503]
60) Issue copies of D&F for GFP to XDS06/Baylor
61) Issue Task Order Manager (TOM) Appointment letters [NAVSEAINST 4200.17B]   - Send copy of appointment letter to contractor [DFARS 201.602-2(5)]

As indicated in the three figures above,   Contract Specialists are faced with a multitude of decisions to consider. Although all of the requirements listed above are not applicable to all procurements, deciphering what is applicable may be a real constraint to the process.

The decision points/steps in each of   these processes would be m apped by the VSA Team. Once the various p rocesses a re m apped, a RIP will be   developed which provides a formal structure for dividing the information into more manageable pieces like RIEs, Just Do Its, and full blown Projects.

We think that the VSA Team should perform the following key actions:

- Focus on the total system
- Do only what is n   eeded, when it is needed,   and as dictated by customer
- Use existing assets; don't add unnecessary sophistication
- Remember that anything that does not add value is waste
- Focus on continuous im   provement through the elim   ination of variations
- Give everyone ownership in the change process
- Support and im plement LSS initiatives to create and sustain a culture of continuous improvement
        (LSS College, Green Belt, Session 3, NAVSEA Norfolk Naval Shipyard)

Through the execution of the RIP, the requi red streamlining and standardizing of the processes should occur. The ultim ate outcome will determine which of the decis ion points/steps are con sidered Value-A dded, Non-Value Added, and/or Non-Value A dded but Essential based on input from t he VSA Team and out put resulting from the LSS events.

Through LSS, the procurem ent process shoul d be stream lined and standardized. The standardization alone should help a lleviate som e custom er com plaints of inconsistencies. Standardization should make it more logica l for the technical customers and should m ake it easier for them to prepar e requirem ents packages with a m arkedly increased throughput rate. The frustration and time saved fr om the technical side should increase cus tomer satisf action. Sta ndardization and consistency s hould help both the relatively inexperienced interns and the more experienced Specialists more quickly grasp the procurement requirement, thus reducing cycle time and Specialist frustration.

E. CONCL USION

We think th at the Seap ort-e p re-award procurement process could be improved and streamlined, by utilizing the tools provided by LSS. Cust omer satisfaction could be improved as cost should be reduced and lead -time should be decrea sed. There should be a reduced cost to the o rganization because of the reductio n in required overtim e and compensatory time utilized, training for the mentor and m entee should be easier because of the use of standardized pr ocesses, m anagement should have the ability to dis tribute work across the contract branches during peak times, and the Contract Specialist's quality of life should be im proved by decreased frustr ation over the myriad of processes utilized in Seaport-e pre-award actions.

We further believe that Cross-functional teams should be form ed to continually revisit SOPs. The Cha mpion should empower the team to make right business decisions. LSS provides NSW CDD with the m ethodology to remove the waste and to standardize the Seapo rt-e pre-award procurem ent proce ss. Once prov en effective, NSWCDD can achieve an improved future state in other procurement processes through the utilization of LSS.

Chapter IV provided the analysis of the fu ture state of the pre-award p rocurement process at NSWCDD. The following and fi nal chapter, will provide the team 's conclusions and recommendations, addressing each research question posed in Chapter I.

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V. CONCLUSIONS AND RECOMMENDATIONS

A.   INTRODUCTION

The researchers have explored how LSS principles might be effectively applied to NSWCDD's pre-award procurement process utilizing the Seaport-e portal. Chapter I set in motion the background, objectives, benefits of study, methodology and organization of the project to provide direction and gain insight into the focus of effort.

Chapter II provided the foundation essential to understanding the methodologies of LSS. The Secretary of the Navy's memorandum issued May 2006 established the need of LSS within the procurement arena. This chapter addressed the concepts, tools, and myths associated with LSS, as well as explained the roles and responsibilities of the members involved in the LSS process. An explanation of the creation of NSWCDD strategic plan was provided in detail, which relied heavily on NSWC Dahlgren Leadership and the Lean Deployment Team. The discussion of NSWCDD strategic plan paved the way to explore the process of creating a Value Stream Map, conducting VSAs, RIPs, RIEs, Projects, and Just Do Its. The chapter concluded with the identification of the key negative issues at NSWCDD that can benefit from the use of LSS processes, including PALT, compensatory time usage, hiring restrictions, customer satisfaction, and cost.

Chapter III specified the organization and activities within NSCWDD Contracts Division (XDS). The Mission and Vision Statements of XDS were provided and the diverse customer base was identified. The various required procurement systems were defined, as well as what we consider to be the frustrations and the hindrance these systems can impose on both the customers and Contract Specialists. The application of LSS within the pre-award process was covered to introduce the importance of a VSA team and the role of the VSA Champion. The known advantages and disadvantages of LSS were reviewed to make known any potential roadblocks or successes that might be encountered by members of the VSA team.

Chapter IV launched the analysis of the future state of the pre-award process at NSWCDD. As a result of NAVSEA directing the issuance of all competitive services

requirements through Seaport-e, the m ajority of contract awards in XDS are m ade through the Seaport-e portal. As such, Seapor t-e was identified as the area in which the implementation of LSS would likely result in the most immediate tim e and cost sav ings. A snapshot of the numerous decisions Cont ract Specialis ts face durin g the pre-award process was covered to illus trate th e abundance of choices that have to be m ade before the contract can even be awarded.

Chapter IV also id entifies what we consid er to be the n eed for a VSA team with members consisting of Contract Specialists and Contracting Officers from all three branches, D FAS representative, technical customers, vendor representation, and policy office representation. We pres cribed the roles a nd responsibilities for the VSA tea m members, including m apping out the current pr e-award process while considering all the variations among the branches. Once the va rious processes are m apped, we recomm end that a RIP be developed which would prov ide a for mal st ructure for di viding t he information into m ore m anageable pieces, such as RIEs, Just Do Its, and full blown Projects. The information provided in th is chapter forms a case th at the use of LSS will streamline and standardize the pre-award procurement process.

Based upon active participant research, a nd literature reviews, the following sections provide answ ers to the prim ary and subsidiary res earch questions and recommended courses of action.

B. PRIMARY   RESEARCH QUESTION

How can LSS be applied within the pre- award contracting process to stream line and im prove acquisition processes, includi ng effects on custom er satisfaction, cost and leadtime?

1. Conclusion

We believe that LSS can be an effectiv e tool if the recomm endations provided herein are actually implemented. The VSA team should include the appropriate members and the VS A Cha mpion should ensure suc cess through empowering and supporting the

VSA team. Through implementation and follow through, LSS should be established as a method of streamlining and improving acquisition processes.

2. Recommen dation

Establish the appropriate VSA team. The key to success w ith LSS is choosing the right individuals to participate on the VSA team. These individuals should include a certified black and green belt, experienced Seaport-e Contra cting Officers and Contract Specialists from all three branches within XDS, DFAS representative, knowledgeable Seaport-e technical custom ers, Se aport-e vendor representation, and policy office representation. The VSA team will define each step in the Seaport-e pre-award p rocess, ensuring the inclusion of the variations betw een the branch es. Once the various pro cess are mapped, the infor mation will be broken down into m ore controllable pieces th rough RIEs, Just Do Its, or full blown Projects.

3. Recommen dation

Ensure the VSA Champion empowers and supports the VSA Team. The VSA team will have to be e mpowered by the VS A Champion (Chief of Contra cts), who will have the following key responsibilities: (1) Communicate the exp ectation that the VSA and ensuing events are a prio rity; and (2) Expe ct and be availab le fo r status briefings. With three separate branches in XDS with several different processes within each branch, the VSA Champion's support will be especially crucial for success.

C. FIRST SUBSIDIARY QUESTION

What are the various approaches fo r launching LSS program s in various acquisition, contracting and procurem ent pr ocesses, e.g., mandated em ployee education and training, on the job training, consultant driven, cross-functional teams?

1. Conclusion

There are various app roaches for la unching LSS program s in acquisition, contracting and procurem ent pr ocesses. The two m ost important co nsiderations to

launching LSS in contracts are m anagement approach and the estab lishment of the LSS teams. We think that it is imperative that the tools of LSS be used to institute transitional change. It is equally essential that a highly competent and well respected team be chosen to launch the firs t Value Stream Analysis . Having involvem ent and a voice in the unfolding of the future state should provide for less disruptive changes, thereby providing a greater change of success.

The first area to be addressed sho uld be the most cum bersome, initially tim e consuming process, the pre-award process. N AVSEA currently has a requirem ent that 100% of the workforce participate in at least one LSS event before the end of the Fiscal Year. This alone p rovides the need of an es tablished approach for launching LSS within the procurement arena.

2. Recommen   dation

Establish Mandatory LSS training for all NSWCDD employees.   With NAVSEA r equiring 100% LSS part icipation, m andatory training of em ployees is a necessity. We think that the forum of choi ce is the weekly W ednesday morning training sessions m ade available to all of XDS. Th e form at of these training sessions w   ould utilize sm all groups, L ean Office Green Belt   trainers, an d illus trative and interactiv e exercises. Due to the substantia l train ing currently required, LSS training needs to be real-time, applicable and engaging.

3. Recommen   dation

Facilitate and Incentivize the Motivation of innovative ideas and LSS participation.   Rewarding m embers of the workforce for innovative concepts, applications and positive part icipation through LSS should se rve as a motivation to a n already burdened group. It should also be an   incen tive to othe rs to becom e part of a solution, to look at an issue from a   new angle and be willing to accept change for the promise of an improved workload. These rewards could be varied depending on the level of involvement. Many times the technical programs will have mugs or shirts to celebrate their involvem ent. W hile the governm ent is limited as to what can be procured, this

52

would be a positive step at "branding" the team. Another suggestions for a reward would be the potential for an increased bonus pool or a step increase.

4. Recommen   dation

Establish a strong, valid Contracts Division Policy Office to establish/publish SOPs.   The Policy Office is respo   nsible for v arious functions affecting the contract workforce, including the dissem   ination of changes to policy and   m aintaining the Contracts Intranet. We think that the Po   licy Office should also be responsible for establishing and publishing best practices and S OPs, as well as m aking them available at a Division Level. This would   alleviate a great deal of un   certainty within contr acting processes and would begin to change the culture to one of standardization.

5. Recommen   dation

Organize Cross-Functional teams to update SOPs.   Through the Policy Office, cross-functional teams should be form ed to c ontinually revisit SOPs. This should serve in breaking down som e of the "our way is th e better way" culture between branches and assist in the sharing of infor mation and over time create a "comm unity" culture between the branches.

D. SECOND   SUBSIDIARY QUESTION

What are the known advantages and disadvantages of applying LSS methodologies to the pre-award contracting process?

1. Conclusion

With the introduction of any new idea or c oncept, consideration must be given to the advantages and disadvantages. Three know n disadvantages of LSS were identified, as follows: (1) Pre-de termined outcome of an event, which can have a negativ e impact on the even t and team m embers' view of futu re events; (2) Lack of authority given to teams by the Cham pion; and (3) Lack of follow   through at the conclu sion of an event. The potential advantages in applying LSS to NSWCDD's pre- award process include: (1)

Decreased PALT due to the elim ination of unnecess ary steps in the pro cess; (2) Decreased com pensatory and overtim e for C ontract Specialists as a resu lt of a streamlined, docum ented process; (3) Decreased cost to the comm and by i mproving throughput and standardizing the process, whic h results in custom er's receiving their requirement in less tim e, saving both techni cal and con tractual workforce tim e; (4) Decreased uncertainty due to the standardization of the process; (5) Inter Branch teaming due to the standardization of the process; (6) Improved custom er satisfaction; and (7) Improved Contract Specialist morale.

E.   THIRD SUBSIDIARY QUESTION

What is the current business model for the pre-award contracting process?

1. Conclusion

The Current State Value Stream Map is shown on page 33.

F.   FOURTH SUBSIDIARY QUESTION

How might Lean Six Sigma principles be applied to improve the current business practices in the pre-award proc urement process? What is a reasonable plan of action for implementing these changes?

1. Conclusion

We think that management approach and the establishm ent of the L SS teams would be the two m ost crucial steps in the process of implementation of Lean Six Sigm a in the pre-award procurement process.

2. Recommen   dation

Transitional change needs to occur to ensure the success of each of the LSS events. We think that transitional change can occur if Management utilizes the LSS tools appropriately. Lean Si x Sigm a pr ovides the tools required to analyze im pact on the organization and the Value Stream Analysis and the Rapid Im provement Plan provide a

logical plan of action to guide the im   plementation. W e believ e th at LSS provid es th e opportunity for less disruptive transitional change to occur, providing a greater chance of success.

3. Recommen   dation

Chose a comprehensive, well respected and organizationally diverse team for the implementation of LSS in the Contracts Division.   The acknowledgem ent of a team's repu tation can h elp ensu re the desi red outcom e of that te am. The access and respect of upper management can help a team align its goals with the organization's goals and help ensure the success of the team. This is a team that "gets the information needed, but does not get stuck in perpetual research." (Constantine, 1993).

4. Recommen   dation

Once management has chosen the team, provide that team with the appropriate resources to run the first Value Stream Analysis for pre-award Seaport-e procurements. With the decision to utilize LSS tool s and the appropriate team, we think that the VSA is the logical nex t ste p in th e achievem ent of i mplementation of a fut ure state. The outcom e of the VSA should provide a structured approach to addressing each area of that VSA.

G FINAL   CONCLUSIONS AND RECOMMENDATIONS

1. Final   Conclusion

This Masters project explores how LSS principles m ight be effectively applied to NSWCDD's pre-award procurem ent process ut ilizing the Seaport-e portal. It provides the foundation essential to understanding the methodologies of LSS and the relevance to the NSWCDD strategic plan. Key negative issues at NSWCDD that can benefit from the use of LSS processes (including PALT, comp   ensatory tim e usage, hiring restrictions, customer satisfaction, and cost) are id   entified. NSWCDD Cont   racts Division is

examined along with the diverse custom er base. Various required procurem ent systems are defined, as well as the frustrations and the hindrance these systems can im pose on both the custom ers and Contract S pecialists. The applic ation of LSS within th e pre-award process is covered to introduce the im portance of a VSA team and the ro le of the VSA Champion and the advantages and disadvantages of L SS were established. F inally, the research ers launch the analysis of the future state of the p re-award pro cess at NSWCDD and claim that because the m ajority of contract awards in XDS are m   ade through the Seaport-e portal, Seaport-e w   ould be the first area identified for LSS implementation.

Chapter IV also identifies the need for a transitional approach and for empowered, successful team me mbers to pa rticipate in each of the ensuing LSS events. Roles and responsibilities for the VSA team m embers were defined, including m   apping out the current pre-award process while con sidering all the variation s among the branches an d a case is m ade tha t th e use of L SS will s treamline an d standa rdize the pre -award procurement process.

H.   SUGGESTED AREAS FOR FURTHER RESEARCH

There a re lim itless op portunities within   the Contracts Division   f or Lean Six Sigma. Once the Seaport-e Pre-Award events are underway, the team suggests that other areas of Pre-Award be identified and less ons discovered through LSS of the Seaport-e process be exploited. The st   andardization of all pre-aw ard processes should be the highest priority. Adm inistration of varying ty pes of contracts is another area in w   hich LSS could streamline.

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